

Notice of Allowability

Application No.

10/519,425

Applicant(s)

FUNAHASHI ET AL.

Examiner

Joseph Saunders

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 17 October 2006.
2. ☒ The allowed claim(s) is/are 1-27.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

DETAILED ACTION

Allowable Subject Matter

1. The following is an examiner's statement of reasons for allowance:

The prior art made of record though similar does not disclose either wherein a suspension holder of which inner periphery is coupled to the voice coil body between the back surface of the diaphragm and the top surface of the magnetic circuit, or wherein the diaphragm has a bent section between the outer periphery and the inner periphery, a part from the bent section to the outer periphery is conical, and the diaphragm is coupled to the suspension holder at the bent section. Though both features can be found, the combination of these features is not present in any one loudspeaker and it would not have been obvious to one of ordinary skill in the art at the time of the invention to combine these features. The following references illustrate what could be found and what was lacking:

- a. Kato et al. (US 6,236,733 B1) discloses a speaker comprising: a magnetic circuit having a magnetic gap, a top surface, and a bottom surface; a voice coil body having a bobbin and a coil section, the coil section being movable in the magnetic gap; a diaphragm of which inner periphery is coupled to an outside of the voice coil body, the diaphragm having a front surface and a back surface; a frame for storing the diaphragm; a first edge for coupling an outer periphery of the diaphragm to the frame; and a second edge for coupling an outer periphery of a suspension holder (damper 10) to the

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frame, wherein the diaphragm has a bent section between the outer periphery and the inner periphery, a part from the bent section to the outer periphery is conical, and the diaphragm is coupled to the suspension holder (damper 10) at the bent section. Kato does not disclose where the suspension holder (damper 10) has its inner periphery coupled to the voice coil body between the back surface of the diaphragm and the top surface of the magnetic circuit. Kato shows the inner periphery of the damper connected to the plate of the magnetic circuit. It would not have been obvious to one of ordinary skill in the art at the time of the invention to attach the inner periphery of the damper to the voice coil body since Kato explicitly teaches against connecting the damper to the voice coil bobbin (Column 6 Lines 39 – 45).

b. D'Hoogh (5,847,333) discloses a speaker comprising: a magnetic circuit having a magnetic gap, a top surface, and a bottom surface; a voice coil body having a bobbin and a coil section, the coil section being movable in the magnetic gap; a diaphragm of which inner periphery is coupled to an outside of the voice coil body, the diaphragm having a front surface and a back surface; a frame for storing the diaphragm; a first edge (connecting elements 13 and 15) for coupling an outer periphery of the diaphragm to the frame; a suspension holder (centering element 17) of which inner periphery is coupled to the voice coil body between the back surface of the diaphragm and the top surface of the magnetic circuit; and a second edge (connecting element 21) for coupling an outer periphery of the suspension holder to the frame. D'Hoogh does not show wherein the diaphragm has a bent section between the outer periphery and the

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inner periphery, a part from the bent section to the outer periphery is conical, and the diaphragm is coupled to the suspension holder at the bent section. Instead D'Hoogh shows a flat conical diaphragm that does not have a bent section, and sub-chassis 3 that acts a coupling member between the centering element 17 and the connecting elements 13 and 15.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Saunders whose telephone number is (571) 270-1063. The examiner can normally be reached on Monday - Thursday, 9:00 a.m. - 4:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JS
December 4, 2006



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SUPERVISORY PATENT EXAMINER